ENERGY POLICY UPDATE

February 24, 2015

Governor's Office of Energy Policy

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

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UPCOMING WEBINARS

NEW! Western Governors' Drought Forum Webinar Series: Click here for more information or to register.

Feb. 25**:** Community Outreach and Consumer Technology for Municipal Water Use

March 11**:** Tip of the Spear: The Horizon for Drought Data, Modelling, and Mapping Technology

March 25: Managing Forest Health for Water Resources

Like our Facebook page! Learn more about energy in Arizona, get daily posts on a variety of energy topics and use the Comment Section to tell us what you think or ask questions of our energy experts.

The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

ASU Research Center Aims for Negative Carbon Emissions

[ASU News, Feb. 17] What if we had the ability to not only reduce greenhouse gas emissions, but also remove excess carbon dioxide from the atmosphere? If we could, where would we store it, and how could it be used in a positive way? A new research center at Arizona State University, led by faculty in the Ira A. Fulton Schools of Engineering, aims to show that capturing excess carbon dioxide from air is a viable strategy to stabilize and reduce greenhouse gases in the atmosphere. It also is a valuable resource that could be recycled to help power the production of synthetic fuels, as well as provide an essential food source for plants in greenhouses. This air capture technology developed by researchers at the Center for Negative Carbon Emissions transcends the limitations of traditional carbon reduction approaches by actually scrubbing carbon dioxide from the air. "There is a limit to the amount of carbon dioxide we can have in the atmosphere; if the limit is surpassed, life becomes intolerable," said Klaus Lackner, the center's director and a new professor in the School of Sustainable Engineering and the Built Environment, one of ASU's Ira A. Fulton Schools of Engineering.

Northern Arizona Schools Try 4-Day Week, Report Little Savings

4-day school week not helping AZ district

[12 News, Feb. 19] The dollars and cents of a 4-day school week are not adding up for the Williams Unified School District. A recent data report by the district shows decreases in only transportation fuel and natural gas use at Williams High School and Williams Middle Elementary School. Water use and electricity use have remained mostly the same. "We're not seeing tremendous savings and we're not spending a tremendous amount more," said Rachel Savage, superintendent of the Winslow Unified School District. "We're relatively flat."

Solar Installations Saving Pima County Money

[Az Public Media, Feb. 23] Pima County's solar panels have saved the government nearly $2 million. Pima County's first solar installation was built in 2009. Since then, the county built eight more projects, and, according to a new report from its Office of Sustainability and Conservation, those have contributed to an energy savings of $1.95 million. Annual savings are estimated to be $338,000, and could increase as more solar projects come online, according to the report. The county generates roughly 9.6 Megawatts of solar power, enough to cover 11 percent of its annual electricity consumption. The bonuses are two-fold, said Alex Oden, of Pima County government.

SRP Revises Solar Rate Hike

[Az Republic, Feb. 20] Salt River Project managers made minor revisions Thursday to their solar rate-hike proposal that mostly will benefit people who own solar panels, not those who lease them. SRP proposed a rate hike that will average 3.9 percent on all customers, but will particularly affect how those who added solar after Dec. 8 are billed. Solar rate changes will add about $50 to the average solar customer's bill, mostly through a new charge based on their peak demand during the month, regardless of the amount of total energy they use. SRP proposed the 15,000 people who already have solar would be "grandfathered," or keep their current rates, for a decade, then move to the new rates. More than 500 customers showed up

April 8**:** One Size Doesn't Fit All: Why Variation in Hydrology and Legal Structures means that Drought Looks Different across the West

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ENERGY STAR Webinars

U.S. Dept. of Energy Tribal Renewable Energy Webinar Series

U.S. Dept. of Energy Webinars

March 3: ENERGY EFFICIENCY IN THE FRANCHISE: BEST PRACTICES FROM BETTER BUILDINGS FRANCHISORS
Click here to register.

2015 UPCOMING EVENTS

RES Las Vegas
Mar. 9-12 Las Vegas, NV

Natural Gas Vehicles + Infrastructure
Mar. 10-11 Phoenix, AZ

GLOBALCON Conference & Expo
Mar. 17-18 Philadelphia, PA

Balance-Unbalance Int'l. Conference; Water, Climate, Place: Reimagining Environments
Mar. 27-29 Tempe, AZ

Arizona Science & Engineering Fair
Apr. 7-9 Phoenix, AZ

Tribal Economic Outlook Conference
Apr. 9 Flagstaff, AZ

Solar Summit 2015
Apr. 14-15 Phoenix, AZ

Utility Solar Conference
Apr. 27-29 San Diego, CA

CxENERGY 2015 Conference & Expo
Apr. 27-30 Las Vegas, NV

Alternative Clean Transportation (ACT) Expo
May 4-7 Dallas, TX

NARUC Utility Rate School - Western
May 11-15 San Diego, CA

to a meeting earlier this month to protest the plan, and some of the elected directors who make decisions for the utility asked management for alternatives. General Manager Mark Bonsall gave them an alternative Thursday. He suggested that the approximately 4,300 customers who already have bought solar panels in SRP territory, and who were paid an incentive by the utility for doing so, get to keep their current rate plan for either 10 years or 20 years from the date they installed the solar, whichever is longer. Most installations have occurred in the last 4-5 years, but a few installations were installed earlier.

ALTERNATIVE ENERGY & EFFICIENCY

Appraising Solar Energy's Value
Solar Panels and Home Values
[New York Times, Feb. 20] New research sponsored by the Energy shows that buyers are willing to pay more for homes with rooftop solar panels — a finding that may strengthen the case for factoring the value of sustainable features into home appraisals. The study, conducted by the Lawrence Berkeley National Laboratory in California, examined sales data for almost 23,000 homes in eight states from 2002 to 2013. About 4,000 of the homes had solar photovoltaic systems, all of them owned (as opposed to being financed through a lease with the solar company). Researchers found that buyers were willing to pay a premium of $15,000 for a home with the average-size solar photovoltaic system (3.6 kilowatts, or 3,600 watts), compared with a similar home without one. Put another way, that translates to about four additional dollars per watt of solar power. The study involved more solar property sales than previous research, making this sample particularly "robust," said Sandra Adomatis, an appraiser in Punta Gorda, Fla., who is considered an expert in "green" valuation and is one of the study's authors.

Biomass Plants Gaining Steam, But Do They Result in Less Carbon?
[Bloomberg, Feb. 24] With the Obama administration hammering out its Clean Power Plan to reduce carbon emissions, the biomass industry is positioning itself as a leader in the renewable energy world. With that, a major U.S. utility has struck a deal with other mega-electricity consumers to provide all of their biomass-produced power. Constellation, a subsidiary of Exelon EXC +2.93% Corp., is investing $200 million in a Georgia-based biomass facility that will produce 50 megawatts when it is completed in 2017. Under a 20-year power purchase agreement, Southern Company's Georgia Power will buy all of the unit's electricity while Proctor & Gamble Co. will purchase all of the steam that will be used to dry its paper products. The unit will be fired with wood scraps from Georgia's rich forestry — biomass materials that the state says must be cleaned up to allow those wooded acres to revitalize. By placing that sustainable fuel source in a new boiler, Constellation says that is producing the electricity to power homes minus much of the carbon. At the same time, the steam that would otherwise be released into the atmosphere will be captured and reused to complete a manufacturing process. While the project is part of a renewable portfolio requirement in Georgia, it is also a company goal for Proctor & Gamble — to fuel itself by using 30 percent green energy by 2020. This project, which is in Albany, Ga., will get the consumer product giant half way there. To this end, the Biomass Power Association says that its fuel comprises 22 percent of the nation's renewable energy usage. As such, it would like the fuel to fully qualify as renewable under the US Environmental Protection Agency's Clean Power Plan that would require a 30 percent cut in carbon by 2030. The question, though, is whether biomass actually cuts carbon. If trees are trimmed to produce the woody chips that would fire up boilers, then there would be fewer trees to absorb carbon emissions. Newly plant trees, meanwhile, can't absorb that carbon at the same rate as older trees.

Dryers: Homes' Energy Guzzlers Just Got Greener
[Associated Press, Feb. 18] For the first time in six years, Energy Star certification, a standard seal of approval for energy efficiency, has been expanded to include another major household appliance. Clothes dryers, perhaps the last of the major household appliances to be included in the U.S. Environmental Protection Agency's program, became available in 45 Energy Star models starting Presidents' Day weekend, according to the EPA. "Dryers are one of the most common household appliances and the biggest energy users," said EPA Administrator Gina McCarthy. While washing machines have become 70 percent more energy-efficient since 1990, dryers — used by an estimated 80 percent of American households — have continued to use a high amount of energy, the agency says. The Energy Star program is designed to help consumers' help save money and protect the environment by curbing energy consumption. "Refrigerators were the dominant energy consumer in 1981. Now dryers are the last frontier in

Solar Power Generation Mexico
May 19-20
World Trade Center, Mexico

Better Buildings Summit
May 27-29 Washington, DC

Energy Efficiency Finance Forum
May 31-Jun. 2 San Francisco, CA

Industrial Energy Tech. Conference 2015
Jun. 2-5 New Orleans, LA

33rd West Coast Energy Mgmt. Congress
Jun. 3-4 Long Beach, CA

14th Annual Small Business Forum & Expo
Jun. 16-18 Phoenix, AZ

ASHRAE Annual Conference
Jun. 27-Jul.1 Atlanta, GA

ACEEE Summer Study on Energy Efficiency in Industry
Aug. 4-6 Buffalo, NY

Energy Efficiency Exchange: Federal Training & Knowledge
Aug. 11-13 Phoenix, AZ

Solar Power Int'l. 2015
Sep. 14-17 Anaheim, CA

2015 North American NGV Conference & Expo
Sep. 15-17 Denver, CO

ACEEE National Conference on Energy Efficiency as a Resource
Sep. 20-22 Little Rock, AR

World Energy Engineering Congress (WEEC)
Sep. 30-Oct. 2 2015 Orlando, FL

Greenbuild Int'l. Conference & Expo
Nov. 18-20 Washington, DC

Renewable Energy World Conference & Expo
Dec. 8-10 Las Vegas, NV

ASU Sustainability Series Events

Green Building Lecture Series
Scottsdale, AZ

the home for radical energy conservation," said Charles Hall, senior manager of product development for Whirlpool. Energy Star-certified dryers include gas, electric and compact models. Manufacturers offering them include LG, Whirlpool, Kenmore, Maytag and Safemate. All of the energy-efficient models include moisture sensors to ensure that the dryer does not continue running after the clothes are dry, which reduces energy consumption by around 20 percent, the EPA says.

Eiffel Tower Installs UGE Renewable Energy System As Part of Monumental Retrofit
Two UGE wind turbines now producing energy on-site at the Paris landmark
[Distributed Energy, Feb. 24] In partnership with the Société d'Exploitation de la Tour Eiffel (SETE), UGE International Ltd. (www.urbangreenenergy.com) (TSX VENTURE: UG) (OTCQB: UGEIF), a leader in renewable energy solutions for business and government customers, has installed two on-site wind turbines at the Eiffel Tower as part of a high-profile renovation and upgrade to the first floor of the monument. Located above the second level for its wind conditions, the turbines are now producing 10,000kWh of electricity annually, equivalent to the power used by the commercial areas of the Eiffel Tower's first floor. UGE designed the wind energy system to provide a clean source of energy at the Eiffel Tower, which is undergoing its first major face-lift in 30 years. The two UGE VisionAIR5 wind turbines were specially painted to match the iconic tower, and top off a series of other efficiency upgrades. The Eiffel Tower's vertical axis wind turbines are virtually silent and designed to capture wind from any direction, offering a unique addition to the historic structure. The location for the wind turbines, 400ft (120m) above ground level, was strategically chosen to maximize energy production, allowing the wind turbines to harvest the steady winds at the height of the installation and offset the Tower's energy usage. Mounting the turbines at this location was itself a technical challenge, requiring each component to be hoisted and suspended with ropes to the Tower's second level.

Incentives for Multifamily Building Developers Save Energy in Long Term
[Energy Manager Today, Feb. 17] A year-long study conducted by Virginia Tech's Center for Housing Research on behalf of Housing Virginia finds that apartments built to higher energy efficiency standards, including third party testing and inspection, outperform new standard construction housing by more than 40 percent with respect to energy consumption. The study suggests investors in multifamily housing across the nation could benefit from the Low Income Housing Tax Credit (LIHTC) program that encourages developers and builders to use a recognized third-party standard in design and construction in order to reduce long-term energy usage. Beginning in 2007, the Virginia Housing Development Authority (VHDA) implemented a set of incentives in the LIHTC program. The incentives required third party testing and inspection from EarthCraft Virginia and LEED. The LIHTC Program is the primary federal housing program designed to create rental housing that is affordable to renters with low and moderate incomes. Under the program, private investors in affordable rental housing receive a tax credit as an incentive for investment. The program produces over 100,000 apartments every year nationally and about 2,000 per year across Virginia.

Three Military Bases Partner with DOE To Train Veterans for Solar Jobs
[Power Magazine, Feb. 17] The first class of Marine trainees at Camp Pendleton graduated from the Department of Energy's (DOE's) solar job training pilot program last Friday. The program is aimed at preparing service members for careers in the solar industry such as solar photovoltaic system installers, sales representatives, and system inspectors. Camp Pendleton is one of three military bases partnering with the DOE's SunShot Initiative to train 200 transitioning military service members during the pilot period for employment opportunities in the rapidly growing U.S. solar energy industry. Training courses will begin at Fort Carson and Naval Station Norfolk this spring. This pilot program is enabled by the Department of Defense's SkillBridge initiative, which allows exiting military personnel to pursue civilian job training, employment skills training, apprenticeships and internships up to six months prior to their separation date. Service members who graduate from the DOE's solar training program will gain the skills to size and install solar panels, safely connect electricity to the grid, and interpret and comply with local building codes.

ENERGY/GENERAL

Citigroup To Set Aside $100 Bln To Fund Green Initiatives
[Reuters, Feb. 18] Citigroup Inc said it would set aside $100 billion to fund environmental projects over the next decade, doubling the amount it had earmarked for such projects in 2007.

Citigroup said it would fund projects related to renewable energy, greenhouse gas reductions and sustainable transportation. The third-largest U.S. bank said it had met its previous investment target three years ahead of schedule in 2013. Citigroup financed the Solar Star photovoltaic project in Southern California for Berkshire Hathaway Energy in 2013. The project, constructed by Sunpower Corp, is expected to generate 579 megawatts of power when completed by the year-end, making it the largest solar project in the world, Citigroup said in an emailed statement. Solar Star is expected to provide enough energy to power more than a quarter million homes, the company said.

France Warns of Nuclear Industry Shake-Up after Areva Loss

[New York Times, Feb. 23] PARIS — France's energy minister said on Monday that an overhaul of the country's state-controlled nuclear energy industry was imminent, after one of the country's main builders of nuclear power plants warned of a loss that could hamper its ability to continue operating independently. The minister, Ségolène Royal, told reporters that France's main nuclear power companies "should organize themselves to refocus on their core business, to forge alliances between major French enterprises and to win bids at the international level." Ms. Royal spoke after Areva, one of the world's leading nuclear technology companies, said in a preliminary statement that it expected a 2014 net loss of about 4.9 billion euros, or $5.6 billion, compared with a loss of €500 million a year earlier. The French government — which has continued to be a proponent of nuclear power when many other big industrial nations have been more equivocal or have come to oppose it outright — owns 87 percent of Areva, and nearly 85 percent of the other big French nuclear power company, EDF, once known as Électricité de France. EDF has been facing its own problems, including lengthy delays and steep cost overruns on a flagship plant that it is building at Flamanville, in the northwest of the country. There are also uncertainties about whether a showcase project in Britain will proceed — one in which both EDF and Areva would participate. The French nuclear industry's travails underline the gloomy state of the nuclear industry since the Fukushima disaster in Japan in 2011. Moreover, the French industry, though long a world leader, has in recent years been threatened by its own mistakes. It has also had trouble coping with the emergence of new challengers like China to sell nuclear plants in countries in emerging markets and the West that value the clean-energy possibilities of nuclear power more than they fear the technology's potential dangers.

Moundsville Power's 549 MW Combined-Cycle Gas Plant Approved by West Virginia Public Service Commission

- Power plant to create new long-term market for local gas producers and royalty owners
- First power plant in the U.S. to burn ethane
- Black & Veatch to design and build plant with General Electric technology
- Plant to contribute $8.4 billion to West Virginia Economy over its 30-year life

[PR Newswire, Feb. 16] Charleston, W.Va. – The West Virginia Public Service Commission has issued a final order approving the siting certificate for Moundsville Power, LLC to construct a 549 megawatt combined-cycle natural gas power plant in Marshall County. Moundsville Power can now proceed to financing. Construction is scheduled to begin in late 2015, with the plant operational in early 2018. The Moundsville Power facility will be a wholesale generator for the PJM grid, of which West Virginia is one of thirteen states. "We are very pleased with this announcement," said Andy Dorn, a partner with the company. "Our heartfelt thanks go out to the West Virginia Public Service Commission and its staff, Governor Tomblin, the Regional Economic Development Council, Project BEST, the Affiliated Construction Trade, the Marshall County Commission and, especially, to the people of West Virginia." The plant will utilize $105 million of natural gas and ethane annually sourced from West Virginia producers and processors. Located in the center of the Marcellus and Utica shale formations, the Plant has direct access to low –priced gas from numerous providers. The Plant is located within 7 miles of 3 interstate pipelines. Once operational, it is expected to be the largest user of natural gas in the state. The plant will be the first power plant in the U.S. to burn ethane. The power plant will be built on a 37-acre portion of land south of Moundsville, a site that previously held the Allied Chemical Plant.

Natural Gas Inventory Exceeds Five-Year Average

[Energy Manager Today, Feb. 23] Working natural gas in storage has surpassed five-year average levels for the first time in more than a year, according to the US Energy Information Administration (EIA). At 2,157 billion cubic feet (Bcf) as of February 13, stocks are 58 Bcf greater than the five-year average. Extremely cold weather may result in high stock withdrawals in late February and could cause stocks to dip below their five-year average;

however, natural gas production in February and March, which is forecast to average 5 Bcf/day more than it did a year ago, is likely to contribute to healthy inventories and moderate prices as the nation moves from winter into spring. While there were several near-record withdrawals early this heating season, withdrawals so far this season have been significantly lower than last winter's record levels, and 16 percent lower than the five-year average. Recent production growth and moderate demand have led to increased storage and relatively low prices. The most recent Short-Term Energy Outlook projects inventories will end the injection season at 1,699 Bcf—43 Bcf more than the five-year average.

Report: Natural Gas Market Efficiency Renders Many Policies Useless

[Fierce Energy, Feb. 19] The depth and efficiency of the United States natural gas market would protect it from potential local policy interventions aimed at limiting access to shale gas resources. That is according to energy economists at Rice University's Baker Institute for Public Policy who examined how new potential and proposed regulations could influence the natural gas market in the U.S. in the coming decades. "Perhaps the single most important result from this study is that the efficiency of the U.S. natural gas market -- owing to deep market liquidity, robust existing natural gas infrastructure, relative ease of infrastructure development and significant connections to Canada -- renders local policies largely irrelevant to the broader U.S. natural-gas market," said Kenneth Medlock, the James A. Baker III and Susan Baker Fellow in Energy and Resource Economics at the Baker Institute and senior director of the institute's Center for Energy Studies. The study looked at policies at the federal level to the local level -- including supply-side actions, such as local regulations to limit gas flaring, localized bans on hydraulic fracturing motivated by grassroots movements founded in concerns over water quality and availability, and a federal ban on hydraulic fracturing perhaps due to heightened concerns related to water quality, water scarcity and seismic activity -- and found that local policy interventions such as mandated reductions in upstream shale activity may result in lower local incomes and employment and have substantial local implications; however, these local policies have little impact on the broader U.S. natural gas market.

Startup of First New U.S. Nuclear Reactor in 20 Years Closer to Reality

[Fierce Energy, Feb. 17] The Tennessee Valley Authority (TVA) is edging ever closer to the startup of its Watts Bar Nuclear Plant Unit 2 (WBN 2) with a recent recommendation by the Advisory Committee on Reactor Safeguards (ACRS), a key advisory group for the Nuclear Regulatory Commission (NRC), to move forward with the process to grant an operating license for the plant. The startup of the plant would mark the United States' first new nuclear plant in 20 years.

INDUSTRIES AND TECHNOLOGIES

Coming Together: First Solar, SunPower and a Yieldco

[Forbes, Feb. 23] They weren't in love with the idea, but apparently they can't say no anymore. First Solar FSLR +14.69% and SunPower SPWR +16.29%, long rivals in developing and selling solar panels and power plants, said Monday they plan to jointly form a yieldco, which is becoming a popular tool for renewable energy companies to raise low-cost capital to fund new projects. In a short statement, the two companies said simply that they are in "advanced negotiations" to form the yieldco and will hold an initial public offering of the company if they reach an agreement. Shares of both companies have been trading up since they released the statement after the market closed. Some of the two companies' competitors have been bullish about yieldcos. SunEdison is a notable example – its executives told analysts that the company could get 2.5 times more value by owning projects through an yieldco than by selling them off. Other companies that have created yieldcos include NRG Energy NRG +2.96%,NextEra Energy NEE +0.89% and Abengoa. First Solar and SunPower used to resist the idea of forming a yieldco, which some investors see as an additional way for the companies to generate more value from the power plants those companies have built and own. A yieldco is a publicly traded subsidiary created by the parent company to hold income-generating assets such as power plants with long-term contracts to sell electricity to utilities (or long-term power purchase agreements with commercial and residential customers). The parent company would sell shares of those assets through public offerings but retain a big stake in them.

Limitless Photovoltaic Future

New PV solar cells have a full periodic table of elements to work with and traditional production issues to deal with.

[RDMag.com website, Feb. 13] Researchers working with photovoltaic (PV) technologies and production processes have made great strides over the past several years, such that PV systems are now considered a viable and cost-competitive energy alternative to traditional fossil fuel energy sources. The number of installations continues to increase, while panel and system costs continue to decline. By the end of 2013, the amount of solar power installed in the U.S. had increased to 13 GW, an 11-fold increase over the previous five years (2008). And from 2010 to 2013, the installed cost of unsubsidized utility-scale PV systems dropped from $4/W to less than $2/W, according to data from the U.S. Dept. of Energy (DOE). Solar efficiencies for all solar cells, including the bulk of silicon-based solar panel commercial installations, also continues to improve. As a result of these trends, the cost of electrical energy derived from PV cells/panels in the U.S. is expected to equal the cost of electrical energy produced by natural gas-driven turbines by 2025, according to a report by Lux Research. But, improvements in PV performance and production output are increasing at a much faster rate than initially estimated, and the equality point is likely to happen even sooner than the Lux report, says Greg Wilson, Director of the National Center for Photovoltaics at the National Renewable Energy Laboratory (NREL), Golden, Colo.

Megascale Desalination

The world's largest and cheapest reverse-osmosis desalination plant is up and running in Israel.

[MIT Tech Review, Feb. 2015] On a Mediterranean beach 10 miles south of Tel Aviv, Israel, a vast new industrial facility hums around the clock. It is the world's largest modern seawater desalination plant, providing 20 percent of the water consumed by the country's households. Built for the Israeli government by Israel Desalination Enterprises, or IDE Technologies, at a cost of around $500 million, it uses a conventional desalination technology called reverse osmosis (RO). Thanks to a series of engineering and materials advances, however, it produces clean water from the sea cheaply and at a scale never before achieved. Worldwide, some 700 million people don't have access to enough clean water. In 10 years the number is expected to explode to 1.8 billion. In many places, squeezing fresh water from the ocean might be the only viable way to increase the supply. The new plant in Israel, called Sorek, was finished in late 2013 but is just now ramping up to its full capacity; it will produce 627,000 cubic meters of water daily, providing evidence that such large desalination facilities are practical. Indeed, desalinated seawater is now a mainstay of the Israeli water supply. Whereas in 2004 the country relied entirely on groundwater and rain, it now has four seawater desalination plants running; Sorek is the largest. Those plants account for 40 percent of Israel's water supply. By 2016, when additional plants will be running, some 50 percent of the country's water is expected to come from desalination. The traditional criticism of reverse-osmosis technology is that it costs too much. The process uses a great deal of energy to force salt water against polymer membranes that have pores small enough to let fresh water through while holding salt ions back. However, Sorek will profitably sell water to the Israeli water authority for 58 U.S. cents per cubic meter (1,000 liters, or about what one person in Israel uses per week), which is a lower price than today's conventional desalination plants can manage. What's more, its energy consumption is among the lowest in the world for large-scale desalination plants.

Tesla Developing Battery System for Houses To Store Solar Power

[Global Construction Review, Feb. 18] Tesla Motors, the US company known for electric vehicles, is developing a battery system for houses that can store solar-generated power for when the sun isn't shining. The claim was made by Elon Musk (pictured), the firm's chief executive, during a conference call with Wall Street analysts earlier this week. The idea is that the battery system would work in tandem with photovoltaic panels in the roof of a home. The batteries would store surplus electricity produced when the sun is shining and make it available when it isn't. It would allow residents to make proper use of the panels and also protect the grid from sudden fluctuations of feed-in current, which can be difficult to balance. Musk said Tesla had already produced a successful design for the batteries, and suggested that the first public demonstration could begin in the next month or so, with production starting up by the end of August. A subsidiary market for the batteries could be homes that do not have access to utilities, and could replace the diesel generator as a source of power. They could also be used to provide emergency power for homes in the event of a black-out.

Utilities Push into Fuel Stations for Electric Cars

[New York Times, Feb. 19] Since hitting the mass market about five years ago, electric vehicles have failed to take off, largely, experts say, because a robust network of public charging stations has not been built. Car companies, retail chains and members of an infant

charger industry have announced partnership after partnership to build the stations, but their number still falls well short of what is needed to nudge millions of drivers into making the switch, analysts say. But now, if major electric utilities have their way, that could change.
In several regions, utilities — big companies experienced in financing, building and managing power infrastructure as well as selling electricity — are getting into the vehicle charging business. Their goal is nothing less than making the electric car a viable alternative for millions of consumers and, in the process, helping shore up their own flattening business of supplying electricity. In Kansas City, Mo., for example, the main utility is building a network with more than 1,000 charging stations for the metropolitan area. And in California, Pacific Gas and Electric recently became the last of California's three big utilities to file a proposal with regulators that would allow it to install 25,000 public chargers — costing $654 million — in a state that has about 6,300 public chargers, at about 2,000 stations. In all, three major utilities envision building as many as 60,000 chargers in California in the coming years. Nationwide, there are about 9,000 public stations, with about 22,900 chargers, according to the Energy Department. The electric vehicle industry has a long way to go to catch up to the availability of gas. In 2012, there were about 114,000 gas stations in the United States, according to the Census Bureau.

LEGISLATION AND REGULATION

Bill Gates and Other Business Leaders Urge U.S. To Increase Energy Research

[New York Times, Feb. 23] The government is spending far too little money on energy research, putting at risk the long-term goals of reducing carbon emissions and alleviating energy poverty, some of the country's top business leaders found in a new report.
The American Energy Innovation Council, a group of six executives that includes the Microsoft co-founder Bill Gatesand the General Electric chief Jeffrey R. Immelt, urged Congress and the White House to make expanded energy research a strategic national priority. The leaders pointed out that the United States had fallen behind a slew of other countries in the percentage of economic output being spent on energy research, among them China, Japan, France and South Korea. Their report urged leaders of both political parties to start increasing funds to ultimately triple today's level of research spending, about $5 billion a year.

Coalition Gathers Signatures for 2016 Vote on Solar Energy

[Sun-Sentinel, Feb. 23] A petition drive that would let Florida voters expand the market for solar energy is racking up signatures. About month into the drive, Floridians for Solar Choice announced they've gathered 100,000 of the nearly 700,000 signatures needed to add their constitutional amendment to the 2016 ballot. Signatures have come "from more than 170 Florida cities from Altoona to Zephyrhills, with more coming in every day," announced Tory Perfetti, who chairs the coalition's political action committee. Florida is one of only five states that ban consumers from buying electricity directly from an entity other than a utility. That means homes and businesses in Florida can't install their own small-scale solar facilities and sell the energy to neighbors. They also can't work with companies that could lease them solar facilities and help them cut the upfront costs for clean sun energy, coalition leaders said. The ballot initiative would ask voters to allow non-utility producers of up to 2 megawatts of solar energy sell that energy to the same property or nearby ones. It also would require utilities to keep serving those customers with their grids, even if those customers buy solar energy elsewhere.

Energy Report To Examine Cyberattack, Global Warming Threats

Implementing fixes, however, will take action in Congress, Energy Secretary Ernest Moniz says.
[U.S. News, Feb. 17] The Energy Department's first-ever review of the nation's energy infrastructure will focus on its vulnerability to climate change, cyberattacks and age, Energy Secretary Ernest Moniz said Tuesday. But, he added, addressing "the full sweep of recommendations" will require action in Congress, not just the Energy Department alone. "To actually get out there and do the kinds of changes we need in energy infrastructure and shared infrastructures," he said, "those almost uniformly will require some action by Congress." The review, he said, will examine four areas: modernizing the country's Strategic Petroleum Reserve, a 727-million-barrel cache of fuel oil set aside for emergencies; expanding energy storage and distributed microgrids to ease the country's reliance on centralized power plants and to make the grid more resilient to attacks or disasters; upgrading infrastructure that's not controlled by the Energy Department but still critical to the nation's energy security; and improving infrastructure overall.

EPA Issues New Guidelines for Automaker Fuel-Economy Testing

[Green Car Reports, Feb. 24] In the wake of multiple incidents of misstated window-sticker ratings, government regulators are reevaluating how carmakers test for fuel economy. The U.S. Environmental Protection Agency (EPA) said Monday it will issue new guidelines for fuel-economy testing. Last year, the EPA said it would issue new formal regulations--but has decided to go with these non-binding guidelines instead, according to *The Detroit News*. Among other things, the new guidelines detail how vehicles should be prepared for testing--including the acceptable amount of tire wear and specifics on how they should be broken in. The guidelines will also address "road load" or "coast down" tests, which are used to measure aerodynamic drag and tire rolling resistance. The results of these tests are used to program a chassis dynamometer, which is used for actual fuel-economy testing while the car is stationary. Currently, the test is conducted while cars coast down from 70 mph on a straight, flat test track, but the new guidelines call for it to be done at 50 mph.

Proposed Energy Standard for Data Centers, Telecommunications Buildings Open for Public Comment

[Distributed Energy, Feb. 20] ATLANTA – A proposed standard from ASHRAE providing requirements for energy use in data centers is open for public input. ASHRAE Standard 90.4P, *Energy Standard for Data Centers and Telecommunications Buildings*, is open for its first public review until March 30, 2015. The standard would establish the minimum energy efficiency requirements of data centers and telecommunications buildings for design and construction and for creation of a plan for operation and maintenance, and for utilization of on-site or off-site renewable energy resources. “The proposed standard is intended to work in concert with ASHRAE/IES Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*,” Ron Jarnagin, chair of the Standard 90.4 committee said. “There is no intent to duplicate what is contained in Standard 90.1, but rather we are proposing criteria to support the specialized nature of the larger data centers. When adopted, design and construction of data centers will require the use of both Standards 90.1 and 90.4 for compliance with building codes.” David Quirk, chair of ASHRAE’s Technical Committee 9.9, Mission Critical Facilities, Technology Spaces and Electronic Equipment, noted that the intent of Standard 90.4P is to create a performance based approach that would be more flexible and accommodating of innovative change, which can occur rapidly in data center design, construction and operation. Data center applications are unlike their commercial building counterparts in two significant ways, he noted. First, they include significantly higher plug loads. And second, they employ rapidly changing technology for the IT equipment and associated power/cooling approaches.

U.S. EPA Chief Hints at Softening Carbon Rule Interim Timeline

[Reuters, Feb. 17] WASHINGTON – The Environmental Protection Agency said on Tuesday that it may ease an interim deadline for states to meet tougher carbon emission standards after regulators and electric utilities complained a lack of time may destabilize electricity supplies. EPA Administrator Gina McCarthy told an audience of state utility regulators meeting in Washington that she was giving them a "big hint" the agency may loosen the interim targets set in its proposed rule for existing power plants, under which each state would need to show an assigned average emission reduction between 2020 and 2029. The proposal, due to be finalized by mid-summer, is the centerpiece of the Obama administration's climate change strategy. Its Clean Power Plan envisions a 30 percent carbon emissions cut from the power sector by 2030, with each state meeting an EPA-assigned carbon reduction goal. McCarthy said the agency did not hear much concern in public comments about the final 2030 goal, but was flooded with fears about the pace at which states and utilities would need to get there.

WESTERN POWER

Borrego Springs Could Go All-Solar Via State Grant to SDG&E

[Times of San Diego, Feb. 17] San Diego Gas & Electric announced Tuesday that a $5 million state grant will allow the utility to expand a solar-powered microgrid in the desert to provide for all of the electricity needs in Borrego Springs. The funding from the California Energy Commission will allow the utility to make the Borrego Springs microgrid one of the largest in the country that relies solely on renewable energy. “This funding will create a true renewable energy microgrid, one that not only bolsters local electric reliability, but does so by using the cleanest resources available,” said James Avery, SDG&E’s senior vice president for power supply. “This project combines our core priorities of enhancing reliability, promoting innovation

and connecting to more clean energy, and we greatly appreciate the CEC's support in making this happen," he said. The microgrid is connected to the region's main energy grid, but can disconnect and function independently during emergencies, supplying vital electricity to the local community through its onsite resources, according to SDG&E. The utility said the microgrid has already kept electricity flowing to the community during several power outages, demonstrating its potential to benefit all customers. The microgrid is currently served by a 26-megawatt solar facility that will be made larger in order to serve the entire community during the day. Large batteries will fill in at night or when it's cloudy, according to SDG&E.

San Mateo County Looks To Ditch PG&E, Jump into Renewable Energy Movement
[Mercury News, Feb. 23] REDWOOD CITY – In the latest sign that a Bay Area renewable energy trend is picking up steam, San Mateo County is taking a close look at buying its own power on the open market, instead of relying on PG&E, in a bid to lower its greenhouse gas emissions. The county is exploring whether to establish a community choice aggregation program, which allows local governments to create their own energy portfolios that rely more on alternative sources like wind and solar and less on fossil fuels. On Tuesday, the board of supervisors will vote on allocating $300,000 toward a technical study of the proposal.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- **INCENTIVES**

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- Job Training
- Quality Jobs
- Qualified Facility
- Computer Data Center Program
- Research & Development
- Foreign Trade Zone
- Military Reuse Zone
- Angel Investment
- Renewable Energy Tax Incentive
- Healthy Forest
- Sales Tax Exemption for Machinery and Equipment
- Lease Excise
- Additional Depreciation
- Work Opportunity
- Commercial/Industrial Solar
- SBIR/STTR
- Private Activity Bonds
- QECB's

- **(ACA) PROGRAMS**

- **DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)**

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News

DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

Students – Geothermal Resources Council (GRC) – The GRC presents news and information for students in the global geothermal community. There are some great opportunities for student scholarships in geothermal. For more information, visit the link below. You will find "Scholarships" half way down the page.

Website: http://www.geothermal.org/students.html
The following solicitations are now available:

(Click on title to view solicitation)

- DE-FOA-0001201: Fiscal Year (FY) 2015 Vehicles Technologies Program Wide Funding Opportunity Announcement – Concept Paper Submission Deadline: 2/26/2015 8:00 PM ET, Full Application Submission Deadline: 4/10/2015 8:00 PM ET

- DE-FOA-0001261: OPEN 2015: The objective of an ARPA-E OPEN FOA is simple, yet comprehensive: to support the development of potentially disruptive new technologies across the full spectrum of energy applications – Notice of Intent Deadline: 2/20/2015 5:00 PM ET, Concept Paper Submission Deadline: 2/27/2015 5:00 PM ET, Full Application Submission Deadline: TBD

- U.S. Department of Agriculture – Phase II (USDA-NIFA-SBIR-004815) – Applications due 2/26/2015

- The Resilient Electricity Delivery Infrastructure (REDI) Initiative (DE-FOA-0001219) – Application Due Date: 3/04/2014

- EPA-EE-14-02 - Environmental Education Local Grants Program – Close Date: 3/06/2015

- Physics of Reliability: Evaluating Design Insights for Component Technologies in Solar 2 (PREDICTS2) – Close Date: 3/12/2015

- Water Resources Research National Competitive Grants Program (G15A00019) – Application due March 12, 2015

- Sustainable and Holistic Integration of Energy Storage and Solar PV (SHINES) Close Date: 3/19/2015

- Solar Powering America by Recognizing Communities (SPARC) Funding Number: DE-FOA-0001241 – Concept Paper Submission Deadline: 3/5/2015 5:00 PM ET; Full Application Submission Deadline:4/27/2015 5:00 PM ET; Webinar Information: Date: February 18, 2015 Time: 4:00pm Eastern Register here: https://attendee.gotowebinar.com/register/3005409845756656642

- Desalination and Water Purification Research and Development (DWPR) (R15AS00019) – Application Due Date: 4/27/2015

- Desalination and Water Purification Research and Development (DWPR) Pilot (R15AS00021) – Application Due Date: 4/27/2015

- American Apprenticeship Initiative (FOA-ETA-15-02) – Application Due Date: 4/30/2015

- Flexible Hybrid Electronics Manufacturing Innovation Institute Grant (BAA-RQKM-2015-0014) – Applications due 5/29/2015

- Advanced Frontiers in Renewable Hydrogen Fuel Production via Solar Water Splitting Technologies – Letter of Intent due 10/7/2015

- Land and Water Conservation Fund State and Local Assistance Program – Application Due Date: 08/11/2015

- Thermal Transport Processed (PD-14-1406) – Application due 10/20/2015

- Landscape Design for Sustainable Bioenergy Systems (DE-FOA-0001179) – Concept Paper due 11/21/2015

- Repowering Assistance Program - Ongoing

- Rural Business Enterprise Grants - Ongoing

- Rural Business Opportunity Grants – Ongoing
- Rural Energy for America Program
- Sunshot Catalyst Prize (DE-FOA-0001126) - Applications Accepted on a Continuous Basis - The U.S. Department of Energy SunShot Catalyst is an open innovation program that allows the public to rapidly create and develop products and solutions that address near-term challenges in the U.S. solar marketplace through prize challenges.
- Sustainable Agriculture Research and Education Grants - Ongoing
- Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines
- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Green Refinance Plus – Ongoing
- National Science Foundation Funding Opportunities